

REMARKS

Claims 1-4 are now pending in the present application. Additionally, Claims 5-10 have been cancelled. Claims 1 and 4 have been amended. Claims 11 and 12 have been added. Support for the amendment for claim 1 can be found in paragraphs 85 and 86 of the instant published patent application (U.S. Pat. Appn. Pub. No. 2003/0037692). The amendment to claim 4 can be found in paragraph 126 and in originally filed claim 4. Claims 11 and 12 are similar to originally filed claims 2 and 3.

Applicant has carefully studied the outstanding Office Action. The present Response is intended to be fully responsive to all points of rejection raised by the Examiner and is believed to place the application in condition for allowance. Favorable reconsideration and allowance of this application are respectfully requested. No new matter has been added by any of the amendments to the specification. Applicant respectfully requests reconsideration and withdrawal of the Examiner's rejections in view of the foregoing amendments and following remarks.

CLAIM REJECTIONS – 35 U.S.C. § 112, Second Paragraph

The examiner has indicated that claim 4 is rejected under 35 U.S.C. § 112 because it substitutes a light metal for aluminum, and, as such, it does not contain every limitation of the claim from which it depends. Claim 4 has been amended in independent form. Consequently, in light of the amendment, it is believed that claim 4 overcomes Examiner's rejections. Applicants respectfully request Examiner withdraw the rejection.

CLAIM REJECTIONS – 35 U.S.C. § 102(b)

Claims 1-4 are rejected under 35 U.S.C. § 102(b) as being anticipated by Bruphacher, et al. As noted in the previous response, the present invention is directed towards high explosives that are mixed with aluminum powder and a portion of the aluminum powder forms molten aluminum. The Examiner acknowledge this, however, indicated that the point was moot because such combination was not claimed. Although the Applicant believed the claimed language in view of the specification did convey such limitation, in the interest of prosecutorial efficiency, Applicant has amended the claim to require the limitation of an aluminum powder. It is hoped that this

amendment will put the application in condition for allowance. Consequently, for at least this reason, Applicants respectfully request the Examiner withdraw the rejection.

Further, as Applicant previously pointed out, the Brupbacher et al reference teaches a method that discharges ceramics. In response, Examiner claims that Brupbacher et al teaches discharging either ceramics or metals, citing column 2, lines 46-48. Examiner further indicates that Brupbacher et al discloses a reactive mixture that reacts exothermically to produce either ceramics or intermetallics, one of which is molten aluminum, citing column 2, lines 46-58. Examiner further claims that the claim limitation of "producing aluminum in its molten state to react with water" is taught in Brupbacher et al at column 2, lines 55-58.

Applicant respectfully disagrees. To anticipate, every element and limitation of the claimed invention must be found in a single prior art reference, arranged as in the claim." *Brown v. 3M*, 265 F.3d 1349, 1351 (Fed. Cir. 2001) (emphasis added). To be arranged as in the same claim "every element of the claimed invention must be identically shown in a single reference." *Diversitech Corp. v. Century Steps, Inc.*, 850 F.2d 675, 677 (Fed.Cir. 1988) (emphasis added). The description contained in the single prior art reference "must describe the applicant's claimed invention sufficiently to have placed a person of ordinary skill in the field of the invention in possession of it." *In re Spada*, 911 F.2d 705, 708 (Fed. Cir. 1990) (citing *Akzo N.V. v. U.S. Int'l Trade Comm'n*, 808 F.2d 1471, 1479 (Fed. Cir. 1986)). This requires that "there must be no difference between the claimed invention and the reference disclosure, as viewed by a person of ordinary skill in the field of the invention." *Scripps Clinic & Research Found, v. Genentech, Inc.*, 927 F.2d 1565, 1576 (Fed.Cir. 1991).

The term "intermetallic" in the cited reference is used to describe compounds involving two or more metals, such as alloys. The "ordinary meaning" of a claim term is its meaning to the ordinary artisan after reading the entire patent. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1321 (Fed. Cir. 2005) (*en banc*). At column 4, line 50, the Brupbacher et al reference has an express and explicit definition of inter-metallic and it states,

In the formation of intermetallic reaction masses, the reactive elements are selected such that they undergo a highly exothermic reaction to form an intermetallic material, which in turn is reactive with water at elevated temperatures. Suitable inter-metallics include aluminides, beryllides, silicides, and intermetallics of chromium with transition materials. Examples of intermetallics include Ni_3Al ,

NiAl, Ti₃Al, TiAl, TiAl₃, FeAl, Nb₃Al, Nb₂Al, NbAl₃, Ti₃Si₃, Zr₃Si₃, VS₂, BaSi₃, NbSi₂, BaSi₃NbSi₂, CrSi₃, Ta₃Si₃, TiBe₁₂, NbBe₁₂, VBe₁₂, and YBe₁₂. Of the aluminides, nickel aluminides and titanium aluminides are particularly suitable.

Not one example above shows aluminum in its elemental form. Applicant submits that the term 'intermetallic' refers to a metal composite, such as an alumide, as opposed to aluminum. Clearly the Brupbacher et al, et al. reference fails to teach or suggest the limitation of releasing aluminum in its molten state, but rather, the Brupbacher et al, et al. reference clearly teaches the use of aluminum bound to another element and therefore discloses an aluminide, unlike the required limitation of the claimed invention. Consequently, for at least this reason, Applicant respectfully requests the Examiner withdraw the rejection.

Further, Applicant submits that Brupbacher et al actually teaches away from the claimed invention. A reference may be said to "teach away" from the claimed invention when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant. *In re Gurley*, 27 F.3d 551, 553, 31 U.S.P.Q.2D 1130, 1131 (Fed. Cir. 1995). The portion of the Brupbacher et al reference cited by the Examiner as teaching the claimed limitation of "producing aluminum in its molten state to react with water" is reproduced below. At column 2, line 46 Brupbacher et al states:

Suitable reactive mixtures include elements that are exothermically reactive to form ceramics or inter-metallics. Preferred mixtures include boron and/or carbon in combination with metals that are reactive to form borides and carbides, such as titanium, vanadium, chromium, zirconium, niobium, molybdenum, hafnium, tantalum, and tungsten. In addition, other metals, such as aluminum, lithium, copper, zinc, magnesium, beryllium, sodium, potassium, calcium, rubidium, yttrium, uranium, and cesium may be included. [These other metals are clearly disclosed and included as part of a mixture, not as reaction products.] These additional metals [used in combination with boron and/or carbon] are heated by the exothermic reaction to the molten or gaseous state and, upon contact with water, contribute to the energy of the explosion.

Based upon the disclosed text above, one skilled in the art would be motivated to use a mixture of boron and/or carbon with a metal (e.g., titanium, etc.) or other metal (e.g., aluminum).

Consequently, for at least this reason, Applicant respectfully requests the Examiner withdraw the rejection.

Applicant further submits that the cited reference fails to teach or suggest the claimed limitation of "a detonation or combustion of the said explosive device, creating mechanical effects in the said medium and releasing aluminum in its molten state." The Examiner merely makes the conclusory allegation that the "production of pressure waves" is "inherent". Inherency may not be established by probabilities or possibilities. *Continental Can Co., U.S.A., vs. Monsanto, Co.*, 948 F.2d 1264, 1268 (Fed. Cir. 1991) Federal Circuit decisions emphasize that an anticipatory inherent future or result must be consistent, necessary, and inevitable, not merely possible or probable. The mere fact that a certain thing *may* result from a given set of circumstances is not sufficient. *Id.* Occasional results are not inherent. *Mehl/biophile Int'l Corp. v. Milgraun*, 129 F.3d 1362, 1365 (Fed. Cir. 1999). In paragraph 118 of the instant published application, the specification indicates that

Often the shock wave alone from the detonation of an explosive charge may not have enough energy to melt aluminum, but if the aluminum material comes in contact with the explosive charge, the high temperature detonation products, along with said shock-heating will put the aluminum material well above its melting point. Consequently, typical uses of this method can be to make shape-charred liners, cases, charge carriers completely or partly of aluminum. Upon detonation of the explosive charge, the liner material projected into a perforation, the shape-charge case and carrier heated and broken in a well bore can all be forced to interact with water and cause a powerful secondary explosion.

Because the claims specifically requires that the mechanical effects be sufficient to release aluminum in its molten state and because specification specifically indicates that often the shockwave is not sufficient to achieve this, Applicant believes the charge of inherency has been sufficiently rebutted. Consequently, for at least this reason, Applicant respectfully requests the Examiner withdraw the rejection.

Claims 2 and 3

Applicant submits that Examiner's "finding should clearly articulate which portions of the reference support any rejection ... Conclusory statements of similarity or motivation without any articulated rational or evidentiary support do not constitute sufficient factual findings."

(MPEP 2144.08 III). As the Examiner failed to support his rejection of claims 2 and 3 with an explanation or specific citation to any reference, the Examiner is respectfully invited to either withdraw the rejection of claims 2 and 3 or provide a specific citation to a reference disclosing the claimed invention.

Claim 4

The Examiner also fails to cite the portion of the Brupbacher et al reference that discloses or teaches several elements of claim 4. For example, where does Brupbacher et al teach “use of a light metal, such as magnesium, or an aluminum-magnesium alloy, or an aluminum-lithium alloy, or a zirconium metal.” Examiner should either explain why such elements are obvious in light of Brupbacher et al or withdraw the rejection. (MPEP 2143.03).

CONCLUSION

Applicant respectfully urges that the subject application is patentable over references cited by Examiner and is now in condition for allowance. Applicant requests consideration of the application and allowance of the claims. If there are any outstanding issues that the Examiner feels may be resolved by way of a telephone conference, the Examiner is cordially invited to contact David Carstens at 972.367.2001.

The Commissioner is hereby authorized to charge any additional payments that may be due for additional claims to Deposit Account 50-0392.

Respectfully submitted,

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